

This report is required by law (7 USC 2143). Failure to report according to the regulations can result in an order to cease and desist and to be subject to penalties as provided for in Section 2150.

See reverse side for additional information.

Interagency Report Control No 0180-DOA-AN

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE

1. REGISTRATION NO.
92-R-0001

CUSTOMER NO.
92-046

FORM APPROVED
OMB NO. 0579-0036

ANNUAL REPORT OF RESEARCH FACILITY
(TYPE OR PRINT)

2. HEADQUARTERS RESEARCH FACILITY (Name and Address, as registered with USDA, include Zip Code)

OREGON HEALTH & SCIENCES UNIV.
3181 SW SAM JACKSON PARK RD., (b)(2)High, (b)(7)f
PORTLAND, OR 97201

3. REPORTING FACILITY (List all locations where animals were housed or used in actual research, testing, teaching, or experimentation, or held for these purposes. Attach additional sheets if necessary.)

FACILITY LOCATIONS/sites

(b)(2)High, (b)(7)f

REPORT OF ANIMALS USED BY OR UNDER CONTROL OF RESEARCH FACILITY (Attach additional sheets if necessary or use APHIS FORM 7023A)

A. Animals Covered By The Animal Welfare Regulations	B. Number of animals being bred, conditioned, or held for use in teaching, testing, experiments, research, or surgery but not yet used for such purposes.	C. Number of animals upon which teaching, research, experiments, or tests were conducted involving no pain, distress, or use of pain- relieving drugs.	D. Number of animals upon which experiments, teaching, research, surgery, or tests were conducted involving accompanying pain or distress to the animals and for which appropriate anesthetic, analgesic, or tranquilizing drugs were used.	E. Number of animals upon which teaching, experiments, research, surgery or tests were conducted involving accompanying pain or distress to the animals and for which the use of appropriate anesthetic, analgesic, or tranquilizing drugs would have adversely affected the procedures, results, or interpretation of the teaching, research, experiments, surgery, or tests. (An explanation of the procedures producing pain or distress in these animals and the reasons such drugs were not used must be attached to this report)	F. TOTAL NO. OF ANIMALS (Cols. C + D + E)
4. Dogs					
5. Cats	2		6		6
6. Guinea Pigs	10		1002		1002
7. Hamsters			362		362
8. Rabbits			272		272
9. Non-Human Primates	2331	804	1015		1819
10. Sheep			260		260
11. Pigs			347		347
12. Other Farm Animals					
goats			4		4
13. Other Animals					

ASSURANCE STATEMENTS

- 1) Professionally acceptable standards governing the care, treatment, and use of animals, including appropriate use of anesthetic, analgesic, and tranquilizing drugs, prior to, during, and following actual research, teaching, testing, surgery, or experimentation were followed by this research facility.
- 2) Each principal investigator has considered alternatives to painful procedures.
- 3) This facility is adhering to the standards and regulations under the Act, and it has required that exceptions to the standards and regulations be specified and explained by the principal investigator and approved by the Institutional Animal Care and Use Committee (IACUC). A summary of all the exceptions is attached to this annual report. In addition to identifying the IACUC-approved exceptions, this summary includes a brief explanation of the exceptions, as well as the species and number of animals affected.
- 4) The attending veterinarian for this research facility has appropriate authority to ensure the provision of adequate veterinary care and to oversee the adequacy of other aspects of animal care and use.

CERTIFICATION BY HEADQUARTERS RESEARCH FACILITY OFFICIAL

(Chief Executive Officer or Legally Responsible Institutional official)

I certify that the above is true, correct, and complete (7 U.S.C. Section 2143)

SIGNATURE OF C.E.O. OR INSTITUTIONAL OFFICIAL

NAME & TITLE OF C.E.O. OR INSTITUTIONAL OFFICIAL (Type or Print)

DATE SIGNED

(b)(6), (b)(7)c

11/30/2005

Oregon Health and Science University
Oregon Regional Primate Research Center
APHIS Form 7023

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Summary of exceptions to the AWA standards and regulations approved by the IACUC October 1, 2004 through September 30, 2005.

1. The IACUC granted exception to the AWA standard that nonhuman primates be housed so that they are able to see conspecifics for 3 specific projects. Introduction of new animals to a room can cause stress and alter experimental results. To allow for a smoother introduction period, if a new animal displays consistent signs of stress it is positioned in a way that disallows visual contact with conspecifics, but allows for vocalization. One adult female rhesus macaque was involved with this exception during the report period. The duration of visual blockage is reduced to as minimal of period as possible, typically 1-5 days. These animals are monitored for signs of abnormal behavior by the Center's Psychological Well-Being staff, and are provided with positive interaction by the project research staff and animal care staff daily.
2. The IACUC granted an exception to the AWA standard that nonhuman primates be housed so that they are able to see conspecifics for male rhesus macaques assigned to the time-mated breeding colony. Midway in this report period the animals assigned to this program were relocated to a new area thus alleviating the need for this exception. During the initial 5 months of this report period, sixteen adult rhesus macaque males were tangent to this exception. These sixteen animals are used to serve approximately 135 adult rhesus macaque females assigned to the time-mated breeding colony. Males are housed with the females approximately 12 days each month. These males were housed in cages that faced a wall that has no cages on it for approximately 18 days per month. When the adult males were housed across from other males and females, it creates an increased amount of stress for all monkeys in the room due to the males threatening others vocally and by shaking their cages. The Center's Psychological Well-Being staff monitored for signs of abnormal behavior and provided ongoing environmental enrichment. There is frequent positive interaction provided by the animal care staff daily. This exception produced a calmer environment in the 2 rooms where these males resided.
3. The IACUC granted an exception to the AWA standard that nonhuman primates be housed so that they are able to see conspecifics for paired female rhesus macaques in the time-mated breeding program. Midway in this report period the animals assigned to this program were relocated to a new area thus alleviating the need for this exception. This exception involved 30 female rhesus macaques housed in locations which did not allow immediate direct visualization of conspecifics for up to 3 continuous days for an average of 3-4 times per year while their cage mate was removed for breeding. These are usually relatively timid animals that become stressed when visually exposed to strange animals. They often have their own infants to care for, receive continued environmental enrichment, are monitored for signs of abnormal behavior by the Center's Psychological Well-Being staff, and are provided with positive interaction with animal care staff daily.
4. The IACUC granted an exception to allow rhesus macaques to be briefly housed in a location that did not allow immediate direct visualization of conspecifics. Due to the lack

of opposing cages involving five cage rows in one non-human primate room, some animals were occasionally without the ability to view conspecifics. Only animals that are pair caged were housed in these rows alleviating the need for opposing cages that house conspecifics. These rows do offer the ability to house certain animals together that tend to be easily intimidated by more aggressive animals. A compatible pairing with another timid animal produces a dramatic increase in confidence in each partner. If a monkey, who lost its compatible cage mate were to be immediately moved into a location where it could see other unfamiliar animals, it would suffer two negative psychological impacts simultaneously: 1) having lost its compatible cage mate, a recognized stress factor, and 2) being suddenly faced with strange monkeys, some of whom may present hostile and aggressive signals to the newcomer. Adequate time is necessary to identify a new potential cage partner and appropriately introduce and socialize the new pair to each other. Thus for a short duration of usually less than 3 days these monkeys were without a cage pair. These animals received continued environmental enrichment, are monitored for signs of abnormal behavior by the Center's Psychological Well-Being staff, and are provided with positive interaction with animal care staff daily.

5. The IACUC granted an exception to the AWA standard that nonhuman primates be housed in specific cage sizes. This exception request involved 84 juvenile rhesus macaques housed in a nursery group cage where the surface dimension is under size but is taller than the standard height. Up to 6 animals are housed together at a time and are representative of the larger end size of group 1 weight category (between 0.1 – 1.0 Kg) and smaller end size of group 2 weight category (between 1 – 3 Kg). The cage is 14.25 sq. ft. at the base, 67 inches in height and has an interior volume of 79.5 cubic ft. The standard size required for 6 animals of group 2 weight category is 18 sq. ft. and 30 inches tall which yields an interior volume of 45 cubic ft. The cage base reduction is deemed mitigated by the positive environmental enrichment provided and the expanded vertical movement capability. The grouping of young animals provides for better socialization. Furnishing the upper portions of the cage with dendritic branches, suspended perches and hanging toys improves opportunity for exercise. The nursery is staffed more intensively than other alternate areas for which the young animals of concern could be caged allowing for a closer monitoring of their condition.
6. The IACUC granted three projects exception to the AWA standard that nonhuman primates be housed in specific cage sizes. These involved the reduction of cage space from 4.3 sq. ft. to 4.0 sq. ft. for twenty one group 3 weight category adult female rhesus macaques (between 3 - 10 Kg) for periods ranging 1-3 months. The monkeys involved, were instrumented by tethered vascular catheters and/or leads. The animals are fitted and adapted to vests, allowed full range of motion and able to stand up, lie down and move about the cage. The reduction in cage size is deemed necessary to protect the chronic capability of sampling from the animal and to preserve and protect the integrity of the instrumentation which when combined ultimately avails improved data for scientific research. The animals are monitored by animal care providers, project staff and by the Center's Psychological Well-Being staff. The alternative to continuous sampling by tethered instrumentation would entail frequent anesthesia that could have negative impact on the animal's condition as well as the quality of the data itself.
7. The IACUC granted one project an exception to the AWA standard for cage size to allow for pairing of 2 adult rhesus macaques in group 4 weight category (between 10 -15 Kg) in 4.3 sq. ft. tandem cages. Two adult males were tangential to this exception. These animals had been caged together as a pair for 3 years and in 7/04 were assigned to the same project. This allowed for the continuation of their pair caged environment. With maturation their weight exceeded the 8.6 sq. ft. of the tandem caging. New caging

allowing for 13 sq. ft. was commissioned mid way thru this report period that alleviated the need for this exception. In the 1st half of this report period, having them remain in a pair caged environment allowed for social interaction which helped the animals assimilate natural behavioral that is important for their health and psychological well-being. Health monitoring is performed several times daily by members of the Animal Husbandry, Clinical staff, Psychological Well-Being and individual project laboratory staff.

8. The IACUC granted 1 project an exception to the AWA standards for cage size to allow for 2 group 5 weight category adult male rhesus macaques (between 15 - 25 Kg) to be housed in 32 inch high caging rather than the required 36 inch. Both animals were within the lower 1/3rd of the group 5 weight category. All cages utilized had 8.6 sq. ft. floor space, which exceeds the required 8.0 sq. ft. This exception was granted to allow consolidation of all project animals into a central area that allowed for the diet and protocol activity to be uniform. All monkeys were monitored multiple times daily by the Centers Clinical, Psychological Well-Being and the individual project laboratory staff for evidence of abnormal health conditions. Near the end of the report period one animal had been provided with a 48 inch tall by 8.6 sq. ft. floor space. This action removed the exception need for this animal. The other animal reached it's needed weight reduction goal, placing it into a group 4 weight category (between 10 - 15 Kg) which also alleviated the need for this exception.
9. The IACUC granted an exception to the AWA standard for cage size to allow pairing of adult rhesus macaques in group 4 weight category (between 10 -15 Kg) in 4.3 sq. ft. tandem cages. Throughout the past year, a total of twenty eight monkeys were pair housed in this fashion until a time in which larger cages became available. All monkeys were in stable pairs affording positive social interaction between members which helped the animals assimilate natural behavior important for their health and psychological well-being. Alternatively these pair caged monkeys would be housed in single caging that would disallow the positive social environment of pair caged housing. Health monitoring is performed several times daily by members of the Animal Husbandry, Clinical and Psychological Well-Being staff.
10. The IACUC granted a project an exception to the AWA standards regarding feeding so that 16 adult rhesus macaques could be fed a 30% caloric reduced diet. This regime and most of the monkeys assigned to it, are part of an ongoing caloric restricted study that originated over a decade ago at the National Institute of Aging facility in Poolesville, Maryland. Newly assigned monkeys to the 30% caloric reduced diet will have their diet calorie content gradually reduced over a 2 month period. This diet has the same composition of protein, carbohydrates and fat as standard monkey chow but in order to insure adequate administration of vitamins and minerals with a reduced volume fed, the vitamins and minerals have been enriched. Treats and food motivators consisting of but not limited to fruit, vegetables, unsalted crackers and frozen treats are be given daily. All monkeys are monitored 3 times daily for behavioral deviations, defecation and for the quantity of food consumed. If monkeys spontaneously decrease their food intake or body weight by more than 30% of their initial baseline levels, veterinary services are summoned. In addition to possible veterinary prescribed procedures, diet alterations may include the feeding of a highly palatable caloric rich substance or supplementation by enteral administration.
11. The IACUC granted the Time Mated Breeding program an exception to the AWA standards for allowed number of research directed major, multiple survival surgeries for adult female rhesus macaques. Availability of rhesus macaques that cycle well and provide consistent pregnancies is extremely limited at NIH supported research facilities.

Allowance for the increase to a total of 4 major survival surgeries (hysterotomies) on up to 2 different projects will expand the capability of reproductive studies and refine the efficient use of this limited nonhuman primate resource. Within the reporting period, 8 animals were tangential to the exception. The previous 3 year exception approval period expired on February 28, 2005. Six of the 8 tangential animals in this reporting period were within the previous 3 year period which brought the total 3 year count to 65. The current renewal 3 year exception period granted by Chester A. Gipson, Acting Deputy Administer, Animal Care, USDA extends this exception to April 4, 2008 for up to 100 animals. Two animals fall with in this new exception period. The exception carries the following requirements:

- 1) All animals under this exemption must be permanently identified.
- 2) Complete health records must be maintained on each animal. These must include the name of any medication administered, as well as the dose, route and frequency/time of administration and a description of any complications that may arise. Health records must accompany the animals used in this study to any future studies.
- 3) This exemption must be included on the research facility's Annual Report (APHIS Form 7023).
- 4) The time between hysterotomies for catheter/electrode placement and fetus/tissue collection must be maximized to the extent permitted by the experimental design. The time between sets of hysterotomies will be no less then 6 months.
- 5) Appropriate post-operative analgesia is described; it is suggested that consideration be given to intra-operative or other pre-emptive analgesic administration.
- 6) An annual IACUC evaluation of this exemption is required; including an assessment of the animals as well as the effectiveness and soundness of the methods and procedures used on them. Particular attention should be paid to the procedures used to minimize pain and distress. This information must be included in the IACUC reports required under Section 2.35(a)(1).
- 7) The subject animals must not undergo any other major survival surgery unless justified in accordance with 9 CFR, Part 2, Section 2.31(d)(x)(C).

12. The IACUC granted an exception to the AWA standards for allowed number of research directed major, multiple survival surgeries for nonhuman primates for a specific project. This exception allows for up to 3 additional laparotomies to be performed on up to 11 adult female rhesus macaques. The aim of a portion of the protocol is to perform laparoscopic surgery to harvest targeted ovarian tissue. Some of the assigned animals have had prior major surgery and adhesions may negate the abilities to harvest tissue by laparoscopic surgical methods. Procurement of tissue would then necessitate a laparotomy. Three separate surgeries for tissue sampling are planned for each animal. This is a long term study that contains some animals that are age matched controls and others that are caloric restricted and all have well-defined reproductive histories. As a resource these animals are extremely rare and valuable and like substitution is not possible. For this report period, no animals were tangential to this exception. This exception was approved by Chester A. Gipson, Acting Deputy Administrator, Animal Care, USDA, for the period April 1, 2002, to March 31, 2005 with the following exceptions:

- 1) All animals must be permanently identified.
- 2) Complete health records must be maintained on each animal. These must include the name of any medication administered, as well as the dose, route and frequency/time of administration and a description of any complications that may arise. Health records must accompany the animals used in this study to any future studies.
- 3) The time between laparotomies will be no less then 2 months.
- 4) Appropriate post-operative analgesia is described; it is suggested that consideration be given to intra-operative or other pre-emptive analgesic administration.

5) An annual IACUC evaluation of this exemption is required; including an assessment of the animals as well as the effectiveness and soundness of the methods and procedures used on them. Particular attention should be paid to the procedures used to minimize pain and distress. This information must be included in the IACUC reports required under Section 2.35(a)(1).

6) The subject animals must not undergo any other major survival surgery unless justified in accordance with 9 CFR, Part 2, Section 2.31(d)(x)(C).

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Annual Report of Research Facility
Reference: APHIS Form 7023

Oregon Health Sciences University

(b)(2)High, (b)(7)f

Certificate Number: 92-R-0001

The OHSU (b)(2)High, (b)(7)f IACUC has approved the following exceptions (10/1/2004-9/30/2005):

One protocol was approved allowing the housing of rabbits for up to 48 hours in primary enclosures that do not allow them to turn around during a period of data collection. The enclosures do allow the rabbits to make most other postural adjustments with adequate freedom of movement. The rabbits are removed every 8 hours and allowed to eat and drink as much as they want during a thirty-minute period. These thirty minute feeding and drinking breaks have been shown to be adequate to maintain body weight. The IACUC accepted scientific justification that this level of restraint is necessary for proper collection of data on these projects. Sixteen rabbits were affected by this exception.

Fourteen protocols were approved allowing investigators to withhold food from sheep for 24 hours prior to surgery. The IACUC accepted scientific justification that ruminants have fewer intra operative complications when fasted for 24 hours. 232 sheep were affected by this exception.

Three protocols were approved allowing the housing of sheep for up to three weeks in stanchions that do not allow them to turn around. The sheep are allowed free access to food and water and are able to stand or lie down. The IACUC accepted scientific justification that this restraint is required to allow withdrawal and infusion of fluids through implanted catheters, continuous monitoring of coronary blood flow, and to prevent the sheep from nibbling at the catheters. 88 sheep were affected by this exception.

One protocol was approved allowing microswine to be housed for 48 hours in metabolic cages that do not provide the square footage of floor area recommended by the Guide. The metabolic cages are 3 ft by 4 ft and allow the pigs to lie down. The pigs are provided food and water and the cages are cleaned daily. The IACUC accepted justification that the pigs need to be housed in the metabolic cages to allow for collection of urine to determine urinary sodium excretion, metabolic sodium and water balance in a microswine model of hypertension following intrauterine growth retardation. No pigs were affected by this exception.

Two protocols were approved allowing multiple major survival surgery in rabbits. The rabbits undergo a laporatomy to implant catheters in the abdominal aorta and vena cava. The rabbits are then allowed to recover for two weeks before a thoracotomy is performed to place an ascending aortic flow probe to measure cardiac output. The IACUC accepted justification that the multiple surgeries were necessary to improve survival rates for the complicated surgeries. No rabbits were affected by this exception.

One protocol was approved allowing nonhuman primates to be housed in individual cages, which do not permit contact with neighboring caged animals. This study involved developing an animal model for Simian Varicella virus (SVV) infection. The IACUC accepted scientific justification that individually housing animals was necessary in order to establish the efficiency of infection and follow the course of disease. Furthermore, housing these animals individually would prevent the transmission of SVV unless the design called for joint housing to attempt natural exposure. No animals were affected by this exception.

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